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(54) Title: METHOD AND APPARATUS FOR ENHANCED SIZE REDUCTION OF PARTICLES

(57) Abstract: The present invention provides methods and apparatus for producing particles via supercritical fluid processing. In one embodiment, the method includes expanding a supercritical fluid plasticized melt across a pressure drop to form solid composite particles that are simultaneously dispersed, foamed and cooled, and milling the solid particles produced to achieve the desired size distribution. In another embodiment, a pressure vessel containing a supercritical fluid plasticized melt is depressurized to form a cooled solid porous mass, which is then milled to obtain solid composite particles.



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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/05412

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B29B 9/00

US CL : 264/5

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 264/5

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,716,558 (Nielsen et al.) 10 February 1998 (10.02.1998), entire patent.	1-19



Further documents are listed in the continuation of Box C.



See patent family annex.

### \* Special categories of cited documents:

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"O" document referring to an oral disclosure, use, exhibition or other means

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document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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Date of the actual completion of the international search

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## Continuation of B. FIELDS SEARCHED Item 3:

Inventor search.

EAST - keywords = load stock, particle, method, supercritical, melt, polysaccharide, polyester, polyether, polyanhydride, polyglycolide, polylactic, polycaprolactone, polyethylene glycol, polypeptide, carbon dioxide, water, nitrous oxide, dimethylether, alkane, alkene, alcohol, ethane, propane, fluoroform, chlorotrifluoromethane, chlorodifluoromethane, propylene, ammonia